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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|--------------------------------|------------------|
| 10/755,042 | 01/09/2004 | Mou-Shiung Lin | MEGP0004USA1 | 8665 |
| 27765 | 7590 | 07/13/2007 | | |
| NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116 | | | EXAMINER JACKSON JR, JEROME | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2815 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 07/13/2007 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu.uspto@gmail.com
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| | | | |
|------------------------------|---------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/755,042 | Applicant(s) LIN ET AL. | |
| | Examiner Jerome Jackson Jr. | Art Unit 2815 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 163-208 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 163-208 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/20/07 has been entered.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 163-178 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wagner 5,196,377.

Wagner shows a silicon substrate 10; a die 38 in a cavity of the substrate; and metallization over the die comprising metal. In regard to the process recitation

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"electroplated" see the previously recited caselaw on product by process claims. The final product is anticipated by Wagner. There are no particular metallization physical properties claimed to unequivocally structurally distinguish over Wagner. Claims 163-166 are anticipated or at least obvious over the structure of Wagner and depending on one's interpretation of "over" and "substantially". Claims 167 and 168 are rejected as layer 90 in figure 11 is a polyimide layer. Claim 169 is rejected as multiple metallization layers would be above the chip in the cavity, or at least it would not be considered unobvious to pile multiple layers over the height of the chip in the cavity to enable many connections. Likewise claim 170 is obvious as multiple pads on chips is routine. Claim 171 is rejected as there are resistors and capacitors in the traces (column 9 lines 53-60). Claim 172 is rejected as there are metalizations from the die in the cavity extending over the die to the carrier. See figure 18. Claims 173 and 174 are rejected as TAB bonding is used (column 11). Claims 175 and 176 are rejected as flip-chip bonding is disclosed. Claims 177 and 178 are rejected as polyimide layers 90 are used and hermetic sealing is disclosed.

Claims 163-178 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Eichelberger '148, of record.

The previous rejection still applies. Claim 166 is rejected as the device surfaces are "substantially coplanar". There are no magnitudes of height difference to clearly distinguish the claims over the structure of '148.

Applicant's arguments filed 4/20/07 have been fully considered but they are not persuasive. Arguments regarding an electrodeposition process are unconvincing

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of patentability because the claims are drawn to a structure. See the recited caselaw. If there is significant structural difference as alleged, the claims must recite the structural differences for convincing argument. There is currently no such structural differences claimed.

Claims 179-208 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger with Wagner and Wachtler 6,707,124.

Eichelberger shows the metalizations as claimed but does not specifically state the substrate is silicon. Wagner teaches similar structure and suggests silicon substrate for superior heat conductivity and thermal expansion matching. In regard to claim 179 Wachtler suggests multiple separate "pads" of the dies connected together. See figure 22. In regard to claims 180-208 the recited art shows "substantial" planarity, polymer insulation, ground, power, solder, etc.


Shrauger 6,558,976 is relevant art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 571-272-1730. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JEROME JACKSON
PRIMARY EXAMINER